

SEQUENCE LISTING

<110> ESUMI, Mariko
TAKAYAMA, Tadatoshi
TAKAGI, Keiko

<120> HEPATOCELLULAR CARCINOMA-ASSOCIATED GENE

<130> 4456-0108PUS1

<140> US 10/568,533
<141> 2006-02-17

<150> PCT/JP04/12425
<151> 2004-08-23

<150> JP 2003-299363
<151> 2003-08-22

<150> JP 2003-334444
<151> 2003-09-25

<160> 228

<170> PatentIn version 3.2

<210> 1
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic DNA

<400> 1
agactgtcag tactgggagc

20

<210> 2
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic DNA

<400> 2
gtccaggacc cttcttatcc

20

<210> 3
<211> 20
<212> DNA
<213> Artificial Sequence

<220>

<223> synthetic DNA

<400> 3
gacgtggaa gacgtttcca 20

<210> 4
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic DNA

<400> 4
tggatgatgc ccgtctcctt 20

<210> 5
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic DNA

<400> 5
aattgccag ggatgaggca 20

<210> 6
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic DNA

<400> 6
tggactcctg gatcttcctc 20

<210> 7
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic DNA

<400> 7
gagaactcag ctgcagtgca 20

<210> 8
<211> 20
<212> DNA

<213> Artificial Sequence		
<220>		
<223> synthetic DNA		
<400> 8		
ttcttagctgg gccgcttaact		20
<210> 9		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> synthetic DNA		
<400> 9		
gacgtgcaga aatggcacct		20
<210> 10		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> synthetic DNA		
<400> 10		
cagtcacacg gcagatggtt		20
<210> 11		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> synthetic DNA		
<400> 11		
cctgcatcag caccaaccaa		20
<210> 12		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> synthetic DNA		
<400> 12		
tggctgacct gtttctccca		20

<210> 13
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic DNA

<400> 13
ccacatccac cactagacac 20

<210> 14
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic DNA

<400> 14
tgacagatgt cctctgaggc 20

<210> 15
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic DNA

<400> 15
cctttcacc aggtatcctg 20

<210> 16
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic DNA

<400> 16
ccacagtgtc cttggaaatg 20

<210> 17
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic DNA

<400> 17
gctgaaggcag atgcaggaca 20

<210> 18
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic DNA

<400> 18
ctaacgagct gacggagttg 20

<210> 19
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic DNA

<400> 19
ggaggttcgaa agacgatcag 20

<210> 20
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic DNA

<400> 20
gtggtgtccct tccgtcaatt 20

<210> 21
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic DNA

<400> 21
agactgtcag tactgggagc 20

<210> 22
<211> 20
<212> DNA
<213> Artificial Sequence

<220>		
<223> synthetic DNA		
<400> 22		
gtccaggacc cttcttatcc		20
<210> 23		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> synthetic DNA		
<400> 23		
gtgtggccaa ctgtgtcatc		20
<210> 24		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> synthetic DNA		
<400> 24		
cttcagacgg tggatggagt		20
<210> 25		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> synthetic DNA		
<400> 25		
aattgcccag ggatgaggca		20
<210> 26		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> synthetic DNA		
<400> 26		
tggactcctg gatcttcctc		20
<210> 27		

<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic DNA

<400> 27
aacaagctgg ctggaaagaa 20

<210> 28
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic DNA

<400> 28
gtacacgaag gtgctgctca 20

<210> 29
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic DNA

<400> 29
gacgtgcaga aatggcacct 20

<210> 30
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic DNA

<400> 30
cagtcacacg gcagatggtt 20

<210> 31
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic DNA

<400> 31
cctgcatcag caccaaccaa 20

<210> 32
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic DNA

<400> 32
tggctgacct gtttctccca 20

<210> 33
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic DNA

<400> 33
tgggcaagtg aggtcttctt 20

<210> 34
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic DNA

<400> 34
ctgaggatca ctggtatcgc 20

<210> 35
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic DNA

<400> 35
gaccccccagt ctcaatctca 20

<210> 36
<211> 20
<212> DNA
<213> Artificial Sequence

<220>

<223> synthetic DNA

<400> 36
agtctttgg cgtcgtagt 20

<210> 37
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic DNA

<400> 37
gctgaaggcag atgcaggaca 20

<210> 38
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic DNA

<400> 38
ctaaccgact gacggagttg 20

<210> 39
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic DNA

<400> 39
ggtcggagtc aacggatttg 20

<210> 40
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic DNA

<400> 40
ggatctcgct cctggaagat 20

<210> 41
<211> 20
<212> DNA

<213> Artificial Sequence		
<220>		
<223> synthetic DNA		
<400> 41		
caaagcatgg gcagtagctc		20
<210> 42		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> synthetic DNA		
<400> 42		
caagcagatc tccatggcag		20
<210> 43		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> synthetic DNA		
<400> 43		
tcttcaaccc cgatgtgcca		20
<210> 44		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> synthetic DNA		
<400> 44		
aggctggtcg gaatggactt		20
<210> 45		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> synthetic DNA		
<400> 45		
cttggaaatgc tcctttggc		20

<210> 46
<211> 20

<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic DNA

<400> 46
atgaacaggt cctcccgctt 20

<210> 47
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic DNA

<400> 47
accatcatca ccaagcgtcg 20

<210> 48
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic DNA

<400> 48
tcacacctgac ctgggtgaag 20

<210> 49
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic DNA

<400> 49
gtcgccctcac catctgtaca 20

<210> 50
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic DNA

<400> 50
ctggaggaca gctgccaata 20

<210> 51
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic DNA

<400> 51
tcctagaagg caaggatgcc 20

<210> 52
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic DNA

<400> 52
gtgggttcc tgtccatagg 20

<210> 53
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic DNA

<400> 53
aacaggccat ggatctggtg 20

<210> 54
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic DNA

<400> 54
aggactggaa cttctccagc 20

<210> 55
<211> 20
<212> DNA
<213> Artificial Sequence

<220>		
<223> synthetic DNA		
<400> 55		
aggataacca tgtggtggcc		20
<210> 56		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> synthetic DNA		
<400> 56		
tgcagtcct ctggcttgaa		20
<210> 57		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> synthetic DNA		
<400> 57		
gctggaactt caacaggac		20
<210> 58		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> synthetic DNA		
<400> 58		
ctgaggatca ctggtatcgc		20
<210> 59		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> synthetic DNA		
<400> 59		
tgaagctaa ctgcgagcag		20
<210> 60		

<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic DNA

<400> 60
acgattggct cttactgcgc 20

<210> 61
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic DNA

<400> 61
acacagagct ctgagtcagc 20

<210> 62
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic DNA

<400> 62
tccaggtag gagggaaagac 20

<210> 63
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic DNA

<400> 63
cctcaaggta ttcctccttc 20

<210> 64
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic DNA

<400> 64
caccaggtac tctggtaagc 20

<210> 65
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic DNA

<400> 65
caaagcatgg gcagtagctc 20

<210> 66
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic DNA

<400> 66
caaggcatacc tccatggcag 20

<210> 67
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic DNA

<400> 67
tcttcacacc cgtatgtgcca 20

<210> 68
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic DNA

<400> 68
aggctggtcg gaatggactt 20

<210> 69
<211> 20
<212> DNA
<213> Artificial Sequence

<220>

<223> synthetic DNA

<400> 69
cttggaaagtc tcctcttggc 20

<210> 70
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic DNA

<400> 70
atgaacaggt cctcccgctt 20

<210> 71
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic DNA

<400> 71
gacgtgaaga aggagccact 20

<210> 72
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic DNA

<400> 72
cgccatccag tacagatcct 20

<210> 73
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic DNA

<400> 73
tgccatagtg gcttgatttg 20

<210> 74
<211> 20
<212> DNA

<213> Artificial Sequence		
<220>		
<223> synthetic DNA		
<400> 74		
tcagaatccc catcatcaca		20
<210> 75		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> synthetic DNA		
<400> 75		
cagggcaaag tggttcaagt		20
<210> 76		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> synthetic DNA		
<400> 76		
tctcagtggg ttccctgtcc		20
<210> 77		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> synthetic DNA		
<400> 77		
aacaggccat ggatctggtg		20
<210> 78		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> synthetic DNA		
<400> 78		
aggactggaa cttctccagc		20

```

<210> 79
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic DNA

<400> 79
aactacgcag ccttggtcag 20

<210> 80
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic DNA

<400> 80
tggcagttga gttgggtaaa 20

<210> 81
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic DNA

<400> 81
gctggaacctt caacaggac 20

<210> 82
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic DNA

<400> 82
ctgaggatca ctggtatcgc 20

<210> 83
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic DNA

```

<400> 83	
ccactcgac agcttcttct	20
<210> 84	
<211> 20	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> synthetic DNA	
<400> 84	
ggatggtctc gtggatgttc	20
<210> 85	
<211> 20	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> synthetic DNA	
<400> 85	
acacagagct ctgagtca	20
<210> 86	
<211> 20	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> synthetic DNA	
<400> 86	
tccaggttag gagggaaagac	20
<210> 87	
<211> 20	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> synthetic DNA	
<400> 87	
cctcaaggc ttccctcc	20
<210> 88	
<211> 20	
<212> DNA	
<213> Artificial Sequence	

<220>
<223> synthetic DNA

<400> 88
caccaggtac tctggtaagc 20

<210> 89
<211> 19
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic DNA

<400> 89
ctgttgtca gccagcagt 19

<210> 90
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic DNA

<400> 90
gaaagccccg aagtaagacc 20

<210> 91
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic DNA

<400> 91
caaggaccgg ttcatttggc 20

<210> 92
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic DNA

<400> 92
gaacacagcc ttctcctcct 20

<210> 93

<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> synthetic DNA		
<400> 93		
tgctcgaaaa aactatgatg		20
<210> 94		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> synthetic DNA		
<400> 94		
ggcctgtgag tctctggata		20
<210> 95		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> synthetic DNA		
<400> 95		
ggaagagtgg agagtactgg		20
<210> 96		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> synthetic DNA		
<400> 96		
atccatcggt catgctctcg		20
<210> 97		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> synthetic DNA		
<400> 97		
gtattcctgg ccctgttgg		20

<210> 98
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic DNA

<400> 98
ctcaccccttg ttaccgctct 20

<210> 99
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic DNA

<400> 99
cttgaaagg atggagctgc 20

<210> 100
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic DNA

<400> 100
atcgtacatg ccccttggga 20

<210> 101
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic DNA

<400> 101
ggcctctatc gtcaacaagg 20

<210> 102
<211> 20
<212> DNA
<213> Artificial Sequence

<220>

```

<223> synthetic DNA

<400> 102
gcgttgaact tgacagcaaa                                         20

<210> 103
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic DNA

<400> 103
taccaatggc gcctcctgga                                         20

<210> 104
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic DNA

<400> 104
ccacagactc tgcaggatg                                         20

<210> 105
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic DNA

<400> 105
ctggaaagggg ccaaggagat                                         20

<210> 106
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic DNA

<400> 106
tctgggtctt ggctggttc                                         20

<210> 107
<211> 20

```

<212> DNA		
<213> Artificial Sequence		
<220>		
<223> synthetic DNA		
<400> 107		20
tggccagaca gacatgtcga		
<210> 108		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> synthetic DNA		
<400> 108		20
tcgaggacag ttccgtgttag		
<210> 109		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> synthetic DNA		
<400> 109		20
tctctggagg ctggagaaag		
<210> 110		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> synthetic DNA		
<400> 110		20
gttccagct tcacagccca		
<210> 111		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> synthetic DNA		
<400> 111		20
atgggctcga agctgcagga		

```

<210> 112
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic DNA

<400> 112
ggaaggtgac atactcctgg                                20

<210> 113
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic DNA

<400> 113
tactccaatg caaccaccaa                                20

<210> 114
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic DNA

<400> 114
aacacaagtt gggatgcaca                                20

<210> 115
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic DNA

<400> 115
tggtgtgctg gctgtgcatt                                20

<210> 116
<211> 20
<212> DNA
<213> Artificial Sequence

<220>

```

<223> synthetic DNA

<400> 116
gaccagatag agaacgccga 20

<210> 117
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic DNA

<400> 117
gtgaatgcct ctggagtgg 20

<210> 118
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic DNA

<400> 118
ttctgttctg acgccaagt 20

<210> 119
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic DNA

<400> 119
gttcttagcca gtacttccgg 20

<210> 120
<211> 19
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic DNA

<400> 120
actcgctccg aattcttgc 19

<210> 121
<211> 20
<212> DNA

<213> Artificial Sequence		
<220>		
<223> synthetic DNA		
<400> 121		
attccgacct cgtcatcagg		20
<210> 122		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> synthetic DNA		
<400> 122		
gctggataa ggtggtctgg		20
<210> 123		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> synthetic DNA		
<400> 123		
ggactttccc aatctgccct		20
<210> 124		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> synthetic DNA		
<400> 124		
aggttgtgct tgcgggcaat		20
<210> 125		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> synthetic DNA		
<400> 125		
aggagagaag ggtgcagaag		20

<210> 126
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic DNA

<400> 126
ccttccatag tagccacgtc 20

<210> 127
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic DNA

<400> 127
acaacctgtg cgggaaatca 20

<210> 128
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic DNA

<400> 128
ggtcatacgca gagtttgcc 20

<210> 129
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic DNA

<400> 129
gcagaaggac aggacaaagc 20

<210> 130
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic DNA

<400> 130

caggctttc ggtaaactcg 20

<210> 131
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic DNA

<400> 131
atggagatga tcccttgctg 20

<210> 132
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic DNA

<400> 132
aggtgttctg tgccttccac 20

<210> 133
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic DNA

<400> 133
gctctaagcc tgtccacgag 20

<210> 134
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic DNA

<400> 134
cgtttcgttga agtagcgatt 20

<210> 135
<211> 20
<212> DNA
<213> Artificial Sequence

<220>

<223> synthetic DNA

<400> 135
gcgacacagg agtgtcaaga 20

<210> 136
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic DNA

<400> 136
tgaccatgat gtagccctga 20

<210> 137
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic DNA

<400> 137
tgaatggcca cagtgatgtt 20

<210> 138
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic DNA

<400> 138
ccattccgtt tttgaaatgc 20

<210> 139
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic DNA

<400> 139
tcgtaagtgg ggctataaccg 20

<210> 140
<211> 20
<212> DNA

<213> Artificial Sequence

<220>

<223> synthetic DNA

<400> 140

ctggttgggt ctgtggaact

20

<210> 141

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> synthetic DNA

<400> 141

ctgaccacccg ggtgtacttt

20

<210> 142

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> synthetic DNA

<400> 142

gacaagtagg gcagcacctc

20

<210> 143

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> synthetic DNA

<400> 143

ggaaccgcgt a c acatggact

20

<210> 144

<211> 20

<212> DNA

<213> Artificial Sequence

<220>

<223> synthetic DNA

<400> 144

aacgtccaa t agcccttacg

20

```

<210> 145
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic DNA

<400> 145
cgcccaacttc tttgagttc                                20

<210> 146
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic DNA

<400> 146
catgaccgtc cctatcttgc                                20

<210> 147
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic DNA

<400> 147
tatggggtct ttgctggaag                                20

<210> 148
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic DNA

<400> 148
gcccacgtga tgataacttga                                20

<210> 149
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic DNA

<400> 149

```

ggtcacttca tgcctgtcct	20
<210> 150	
<211> 20	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> synthetic DNA	
<400> 150	
tatggcggaa gccagcttca	20
<210> 151	
<211> 20	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> synthetic DNA	
<400> 151	
cacaaggccct ttgaatccat	20
<210> 152	
<211> 20	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> synthetic DNA	
<400> 152	
tgtctccagc tccacacaaag	20
<210> 153	
<211> 21	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> synthetic DNA	
<400> 153	
ttgagaattc cagagccaag a	21
<210> 154	
<211> 20	
<212> DNA	
<213> Artificial Sequence	
<220>	

<223> synthetic DNA

<400> 154
cacccatctt caccacacac 20

<210> 155
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic DNA

<400> 155
aagaccgaac tgagcaagga 20

<210> 156
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic DNA

<400> 156
ttttccccag gtccacagtc 20

<210> 157
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic DNA

<400> 157
cgggcaagac ttttcttg 20

<210> 158
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic DNA

<400> 158
tgccttcctc atccccttat 20

<210> 159
<211> 20
<212> DNA

<213> Artificial Sequence	
<220>	
<223> synthetic DNA	
<400> 159	
tccaaggatg atctcccact	20
<210> 160	
<211> 20	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> synthetic DNA	
<400> 160	
agcatccgat tccttcttca	20
<210> 161	
<211> 20	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> synthetic DNA	
<400> 161	
tgataaggac gttgcaggag	20
<210> 162	
<211> 20	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> synthetic DNA	
<400> 162	
aagttagctg ggtttccaga	20
<210> 163	
<211> 20	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> synthetic DNA	
<400> 163	
ggtgtcagag ccagttgtca	20

```

<210> 164
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic DNA

<400> 164
aaatttccac atcggcagtc                                20

<210> 165

<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic DNA

<400> 165
ccaccattgg taccatttcc                                20

<210> 166
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic DNA

<400> 166
cccctcacct gaacctcata                                20

<210> 167
<211> 22
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic DNA

<400> 167
ttttctggaa cattcaaatt ca                                22

<210> 168
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic DNA

```

<400> 168	
cacttttgt catcgctgga	20
<210> 169	
<211> 20	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> synthetic DNA	
<400> 169	
tgcagtggaa tacggatcaa	20
<210> 170	
<211> 20	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> synthetic DNA	
<400> 170	
ggaaggcagac cacagaggag	20
<210> 171	
<211> 20	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> synthetic DNA	
<400> 171	
agtggaaagg gtgggtgaag	20
<210> 172	
<211> 20	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> synthetic DNA	
<400> 172	
caaccataaca ctgccacagg	20
<210> 173	
<211> 20	
<212> DNA	
<213> Artificial Sequence	

<220>		
<223> synthetic DNA		
<400> 173		
cacttaagga gcgctggAAC		20
<210> 174		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> synthetic DNA		
<400> 174		
tttgcagtct ggcaagttag		20
<210> 175		
<211> 21		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> synthetic DNA		
<400> 175		
gccacttctg cttctgtgttt t		21
<210> 176		
<211> 22		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> synthetic DNA		
<400> 176		
tccaccataaa aagatgtgga aa		22
<210> 177		
<211> 20		
<212> DNA		
<213> Artificial Sequence		
<220>		
<223> synthetic DNA		
<400> 177		
cctccactca tgtccccattt		20
<210> 178		
<211> 20		

<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic DNA

<400> 178
tcaagccatg cttttctgtg 20

<210> 179
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic DNA

<400> 179
atttttagcca atggcctcct 20

<210> 180
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic DNA

<400> 180
cactggtttg cagcgataga 20

<210> 181
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic DNA

<400> 181
atttgtaat tgggattgga 20

<210> 182
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic DNA

<400> 182
gaagccccacc acagtaggaa 20

<210> 183	
<211> 20	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> synthetic DNA	
<400> 183	
tggatcgaat ccaaacacaa	20
<210> 184	
<211> 20	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> synthetic DNA	
<400> 184	
ctggcttgtc tgcaaaccctt	20
<210> 185	
<211> 20	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> synthetic DNA	
<400> 185	
ctccatcatc cacccacttt	20
<210> 186	
<211> 20	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> synthetic DNA	
<400> 186	
ggaaggccag caagtgtaga	20
<210> 187	
<211> 20	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> synthetic DNA	

<400> 187	
gccagaaaat tgaccctgag	20
<210> 188	
<211> 20	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> synthetic DNA	
<400> 188	
cagctgctca gcgatcttac	20
<210> 189	
<211> 20	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> synthetic DNA	
<400> 189	
ccctcatcgt gtcaagtcaa	20
<210> 190	
<211> 20	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> synthetic DNA	
<400> 190	
agcatcaaac agacccaacc	20
<210> 191	
<211> 20	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> synthetic DNA	
<400> 191	
ttgtttggct gggatagagg	20
<210> 192	
<211> 20	
<212> DNA	
<213> Artificial Sequence	

<220>
<223> synthetic DNA

<400> 192
gctctgtccg gatagctacg 20

<210> 193
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic DNA

<400> 193
ccctacaagg tgaacccaga 20

<210> 194
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic DNA

<400> 194
ggagtagcag ctggttcctg 20

<210> 195
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic DNA

<400> 195
tgacaaccta tgccatttcg 20

<210> 196
<211> 21
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic DNA

<400> 196
ccacacaaga cctatgatag a 21

<210> 197

<211> 20	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> synthetic DNA	
<400> 197	
ctcaaggatg acgtgggttt	20
<210> 198	
<211> 20	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> synthetic DNA	
<400> 198	
gatttcctct ggccaaattca	20
<210> 199	
<211> 20	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> synthetic DNA	
<400> 199	
aactacgcag ccttggtag	20
<210> 200	
<211> 20	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> synthetic DNA	
<400> 200	
tggcagttga gttgggtaaa	20
<210> 201	
<211> 20	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> synthetic DNA	
<400> 201	
gatgttacca atcccgttcg	20

<210> 202
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic DNA

<400> 202
tgggctccta tatgcgggtta 20

<210> 203
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic DNA

<400> 203
tgctttcaac gtggagtttg 20

<210> 204
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic DNA

<400> 204
cccatatattt ggtgttccag 20

<210> 205
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic DNA

<400> 205
caaaatgctg ctgggtgaaga 20

<210> 206
<211> 20
<212> DNA
<213> Artificial Sequence

<220>

<223> synthetic DNA	
<400> 206	
gctctgtca gctcaaggac	20
<210> 207	
<211> 20	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> synthetic DNA	
<400> 207	
gtcgtcagca gccatgtta	20
<210> 208	
<211> 20	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> synthetic DNA	
<400> 208	
ggcaggtcaa aggtcatgtt	20
<210> 209	
<211> 20	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> synthetic DNA	
<400> 209	
gggatgcttg aagatggaaa	20
<210> 210	
<211> 20	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> synthetic DNA	
<400> 210	
cagtggcacc ataggcataa	20
<210> 211	
<211> 20	
<212> DNA	

```

<213> Artificial Sequence

<220>
<223> synthetic DNA

<400> 211
gctcctgggt agaactgcac                                20

<210> 212
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic DNA

<400> 212
gccctgttgg tatcttggt                                20

<210> 213
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic DNA

<400> 213
ttgaggaat cctggacctg                                20

<210> 214
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic DNA

<400> 214
ttgaggtctc gcaccttctt                                20

<210> 215
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic DNA

<400> 215
ctgatggagt acgcaaagca                                20

```

<210> 216	
<211> 20	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> synthetic DNA	
<400> 216	
ctcgagaatg tcaggggtgt	20
<210> 217	
<211> 18	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> synthetic DNA	
<400> 217	
acagagcctc gcctttgc	18
<210> 218	
<211> 18	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> synthetic DNA	
<400> 218	
cacatggag ggaaagac	18
<210> 219	
<211> 20	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> synthetic DNA	
<400> 219	
gagctggaa gattcgaaca	20
<210> 220	
<211> 20	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> synthetic DNA	

<400> 220	
agagatacgc aggtgcagg	20
<210> 221	
<211> 19	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> synthetic DNA	
<400> 221	
gagatctcgc cggctttac	19
<210> 222	
<211> 20	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> synthetic DNA	
<400> 222	
cgcgagagtc aaagatctcc	20
<210> 223	
<211> 21	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> synthetic DNA	
<400> 223	
cagctccagg aaatgctagt g	21
<210> 224	
<211> 20	
<212> DNA	
<213> Artificial Sequence	
<220>	
<223> synthetic DNA	
<400> 224	
ggtggaaactt gggatcagac	20
<210> 225	
<211> 20	
<212> DNA	
<213> Artificial Sequence	

<220>
<223> synthetic DNA

<400> 225
gagggaaaggc ttagccatgt 20

<210> 226
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic DNA

<400> 226
ttgaagggtc catgcctatc 20

<210> 227
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic DNA

<400> 227
gcctgttaagt acggggacaa 20

<210> 228
<211> 20
<212> DNA
<213> Artificial Sequence

<220>
<223> synthetic DNA

<400> 228
ctcttcagcg ttgtggatga 20